



VKM Report 2018: 12

Research needs of importance for food safety and environmental protection as based on data gaps identified by VKM

Summary report from VKM's scientific opinions from 2016 to 2017
Opinion of the Scientific Steering Committee of the Norwegian Scientific Committee for Food and Environment

Report from the Norwegian Scientific Committee for Food and Environment (VKM) 2018: 12
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The goal of this report is to highlight research needs and data gaps that are of future importance for food safety and protection of the environment and thereby improve the national knowledge base. This report is the latest in a series of reports on research needs and data gaps published periodically by the Norwegian Scientific Committee for Food and Environment (VKM), former Norwegian Scientific Committee for Food Safety (VKM), and thus seeks to highlight research needs and data gaps identified in and related to VKM's scientific opinions for 2016 and 2017 only.

VKM conducts and communicates independent scientific opinions in the form of risk assessments as well as risk-benefit assessments in the areas of food safety and environmental protection.

Food safety is one of the prerequisites for good health, and is on the agenda both nationally and internationally. Since food production, food products on the market and dietary habits as well as the presence of potential hazards are constantly changing, there is a continuous need for new knowledge to ensure safe food.

Protecting the environment, that is, the biotic and abiotic surroundings of humans, animals and other species is vital for the benefit of both humans and the environment. Rapid changes in the environment at the different levels as well as complex interactions and various stressors requires continuous monitoring and surveillance measures to update existing data.

Research and surveillance data from other countries are not necessarily representative or relevant to Norway, since critical factors such as environmental conditions and dietary habits are distinctive. Knowledge on Norwegian conditions in particular, must therefore be generated nationally. It is necessary that we have active Norwegian research communities within the areas where such knowledge is needed.

To ensure food safety and protection of our environment, VKM highlights that it is of importance that the following needs and data gaps are covered:

- The impact of climate change and globalisation on food safety and food production.
- The impact of climate change and globalisation on natural resources and biodiversity in Norway.
- The use of microbiological products, development and potential dissemination of antimicrobial resistance (AMR) in Norway.
- Radioactivity levels in Norwegian food and drinking water, national dietary surveys as well as epidemiological studies.

An overview of specific research needs and data gaps identified in VKMs reports from 2016 to 2017 are as follows:

Agriculture, terrestrial food production and terrestrial animals

- Driving factors in the development of AMR due to biocides and heavy metals
- The potential impact of microorganisms used in bioremediation and cleaning products
- Plant health regarding specific weeds and pests
- Animal health and welfare during poultry production
- Association between bumblebee mortality and lime (*Tilia*) trees
- Presence and concentration of pathogens in food and drinking water as well as analytical data for nutrients

Fisheries, aquaculture, seafood production and aquatic animals

- Animal health and welfare regarding introduction of novel pathogens in aquaculture through cleaner fish and marking of farmed fish
- Nutrients in fish and other seafoods

Human health – diet, food and microbiological products

- Norwegian occurrence/consumption data for inorganic arsenic
- Occurrence of foodborne pathogens and disease incidence/foodborne diseases
- Knowledge on the intake of food supplements
- Genetically modified (GM) food; herbicide residues in herbicide tolerant (HT) crops as well as safety assessments of genetically modified crops
- National dietary surveys as well as epidemiological studies on the association between diet and health
- The health effects of microorganisms used in bioremediation/cleaning products

Biodiversity

- Spread, climate tolerance, as well as ecological impact of alien organisms in Norway
- Association between bumblebee mortality and lime (*Tilia*) trees
- Genetically modified virus vaccines (GM-VV) in domestic animals
- Ecological impact of cultivating, import and processing of genetically modified crops in Norway

Surveillance data for food and diet

- Monitoring data on occurrence of radioactivity in Norwegian food and water
- Dietary surveys, nutrients, epidemiological as well as mechanistic studies on food and food groups

About VKM

VKM carries out independent scientific assessments in the form of opinions for the Norwegian Food Safety Authority (Mattilsynet) and the Norwegian Environment Agency (Miljødirektoratet). An opinion can be a risk assessment, a risk-benefit assessment, a research summary or other scientific reviews and comments. VKM follows international guidelines and standards for risk assessments within the different fields to ensure that the authorities get independent scientific risk assessments related to food safety and the environment. VKM neither performs research nor gives advice or opinions on risk management.

VKM assesses risk within these fields:

<u>Food safety and production</u>	<u>Environment</u>
<ul style="list-style-type: none">• Biological Hazards• Plant Protection Products• Genetically Modified Organisms• Flavourings• Food Additives• Processing Aids• Materials in Contact with Food• Cosmetics• Contaminants• Animal Feed• Nutrition• Dietetic Products• Novel Food• Food Allergies• Animal Health and Animal Welfare• Plant Health	<ul style="list-style-type: none">• Genetically Modified Organisms• Alien Organisms• Trade in Endangered Species (CITES)• Microbial Products• Plant Protection Products

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Assessed and approved

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(in alphabetical order after chair/vice-chair of the Panel/Committee)

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Competence of VKM experts

Persons working for VKM, either as appointed members of the Committee or as external experts, do this by virtue of their scientific expertise, not as representatives for their employers or third party interests. The Civil Services Act instructions on legal competence apply for all work prepared by VKM.